

## CLAIMS

- 1 1. A linear direct current motor comprising:
- 2 a center yoke extending in a longitudinal direction;
- 3 an outer yoke arranged parallel to the center yoke;
- 4 a permanent magnet for generating a magnetic field
- 5 between the outer yoke and the center yoke;
- 6 a coil assembly movable in the longitudinal direction
- 7 and having an opening through which the center yoke passes; and
- 8 wherein the coil assembly includes a flat cooling pipe
- 9 having a cross section elongated in the longitudinal direction
- 10 and a U-shaped fold for passing the center yoke through;
- 11 a manifold having a cooling medium inlet and a cooling
- 12 medium outlet and being connected to both ends of the cooling
- 13 pipe, and
- 14 a coil wound around the cooling pipe and the manifold
- 1 2. The linear direct current motor according to Claim 1,
- 2 wherein the cooling pipe has a plurality of minute holes
- 3 through which coolant can flow, said holes being aligned in the
- 4 longitudinal direction.
- 1 3. The linear direct current motor according to claim 1,
- 2 wherein the length of the elongated cross section of the
- 3 cooling pipe is larger than the length of the coil in the
- 4 longitudinal direction.